WHAT IS CLAIMED IS:

1. A vibrator comprising:

a vibrating body;

a driving unit for causing said vibrating body to vibrate in a predetermined vibrating direction; and

a driving monitoring unit provided in a barycentric region of said vibrating body for detecting vibration displacement in a driving direction of said vibrating body.

2. A vibrator according to claim 1, wherein said vibrating body vibrates in the driving direction thereof and in a Coriolis force direction that is substantially perpendicular to said driving direction when a Coriolis force is applied to said vibrating body, and further comprising a Coriolis force direction vibrating detecting unit for detecting vibration displacement in the Coriolis force direction of said vibrating body.

3. A vibrator according to claim 1 or claim 2, wherein said vibrating body has a double-frame construction obtained by connecting an inner frame to the inside of an outer frame via a coupling beam so that said vibrating body can flexibly vibrate in the Coriolis force direction, and said driving unit causes said outer frame and said inner frame to vibrate in an integral manner in the driving direction, said inner frame being constructed and arranged so as to be vibrated in the Coriolis force direction with respect to said outer frame due to the Coriolis force caused by the angular velocity, and said driving monitoring unit being provided in the barycentric region of said vibrating body disposed inside said inner frame while being supported by said inner frame.

4. A vibrator according to claim 3, in which said Coriolis force is caused by an angular velocity of rotation around an axis having a direction perpendicular to both said driving direction and said Coriolis direction and further comprising a circuit responsive to said Coriolis force direction vibrating detection unit for determining said angular velocity of rotation.